

#### INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6: H04M 7/00, H04L 29/06

(11) International Publication Number:

WO 99/14931

W1 //00, 1104L 25/00

**A3** 

(43) International Publication Date:

25 March 1999 (25.03.99)

(21) International Application Number:

PCT/US98/19254

(22) International Filing Date:

16 September 1998 (16.09.98)

(30) Priority Data:

60/059,087

16 September 1997 (16.09.97) US

(71) Applicant: TRANSNEXUS, LLC [US/US]; Suite N-204, 430 Tenth Street, N.W., Atlanta, GA 30318 (US).

- (72) Inventors: DALTON, James, Pleasant, Gossett, Jr.; 3300 Wood Valley Drive Road, Atlanta, GA 30327 (US). DALTON, Alcina, de Figueiredo; 3300 Wood Valley Road, Atlanta, GA 30327 (US). THOMAS, Stephen, Anthony; 4397 Windsor Oaks Circle, Marietta, GA 30066 (US). COWN, Maria, Osterholt; 2854 Betula Drive, Austell, GA 30106 (US). VAUGHN, Rich, Carroll; 4383 Burnleigh Chase, Roswell, GA 30075 (US). SZCZERBINA, Pawel; 795 Hammond Drive #1604, Atlanta, GA 30328 (US). LOVETTE, Brian, Keith; 2540 Ingram Road, Duluth, GA 30136 (US).
- (74) Agents: PAVENTO, Michael, S. et al.; Jones & Askew, LLP, 37th floor, 191 Peachtree Street, N.E., Atlanta, GA 30303 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

#### Published

With international search report.

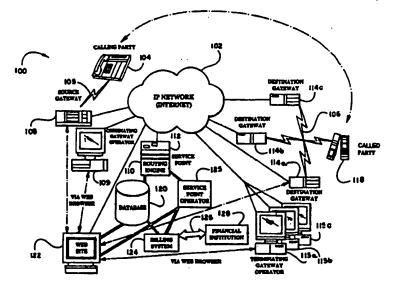
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(88) Date of publication of the international search report: 14 May 1999 (14.05.99)

#### (54) Title: INTERNET TELEPHONY CALL ROUTING ENGINE

#### (57) Abstract

The present invention discloses a centralized routing engine that is able to assist gateways in making routing decisions for calls being placed in an IP network environment. Types of calls include voice, fax, video, etc. The routing engine provides significant flexibility to the gateways by allowing the gateways to designate preferences that define operational limits or requirements. A source gateway operator may set preferences such as the maximum price that is willing to be paid for a call, the maximum delay that will be tolerated and the maximum autonomous system hop count that will be tolerated. A destination gateway operator is likely only to be concerned with setting price schedules as preferences. Gateway operators may also set "preference criteria", which define the circumstances in which a certain set of preferences is to be applied. Based on preferences and preference criteria, the routing engine is able to locate destination gateways that are eligible to terminate a voice over telephony IP call. The routing engine provides a prioritized



list of eligible destination gateways to the source gateway. The source gateway then works through the prioritized list and attempts to set up the voice over IP telephony call with each eligible destination gateway, until the call is established.

#### FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	, VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	zw	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR.	Republic of Korea	PT	Portugal		
CU	Cuba	ΚZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	u	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

## INTERNATIONAL SEARCH REPORT

inter onal Application No PCT/US 98/19254

A. CLASS	IFICATION OF SUBJECT MATTER H04M7/00 H04L29/06			
110 6	HU4H7700 HU4L29700	•		
		the and IDO		
	o International Patent Classification (IPC) or to both national classific SEARCHED	cation and IPC		
Minimum de	ocumentation searched (classification system followed by classificat	ion symbols)		
IPC 6	HO4M HO4L	•		
Documenta	tion searched other than minimum documentation to the extent that	such documents are included in the fields se	earched	
Electronic o	tata base consulted during the international search (name of data base)	ase and, where practical, search terms used	) ·	
	•			
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where appropriate, of the re	elevant passages	Relevant to claim No.	
P,X	WO 98 36543 A (TELIA AB PUBL ;AL	MGRFN	1-3,	
١,٨	GUNNAR (SE)) 20 August 1998		23-25,33	
	see the whole document			
Α	THOM G A: "H. 323: THE MULTIMED	IA	1-49	
	COMMUNICATIONS STANDARD FOR LOCA			
	NETWORKS" IEEE COMMUNICATIONS MAGAZINE,			
	vol. 34, no. 12, December 1996,	pages		
	52-56, XP000636454			
	see the whole document			
Α	RUDKIN S ET AL: "REAL-TIME APPL	1-49		
	ON THE INTERNET" BT TECHNOLOGY JOURNAL,			
	vol. 15, no. 2, April 1997, page	s 209-225,	,	
	XP000703571			
	see the whole document			
		-/		
X Fur	ther documents are listed in the continuation of box C.	Patent family members are listed	in annex.	
° Special c	alegories of cited documents :	"T" later document published after the inte		
	ent defining the general state of the art which is not dered to be of particular relevance	or priority date and not in conflict with cited to understand the principle or th invention	eory underlying the	
"E" earlier	document but published on or after the international date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to		
"L" docum	ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another	thvolve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention		
	on or other special reason (as specified) nent referring to an oral disclosure, use, exhibition or	cannot be considered to involve an in document is combined with one or mi	ventive step when the ore other such docu-	
other	means nent published prior to the international filing date but	ments, such combination being obvio in the art.	us to a person skilled	
later l	than the priority date claimed	*&" document member of the same patent		
Date of the	actual completion of the international search	Date of mailing of the international se	arch report	
1	12 March 1999	23/03/1999		
Name and	mailing address of the ISA	Authorized officer		
	European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk			
	Tél. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Megalou, M		

2

#### INTERNATIONAL SEARCH REPORT

Inter anal Application No
PCT/US 98/19254

	CUMENTS CONSIDERED TO BE RELEVANT	Relevant to claim No.
ategory Citation	of document, with indication, where appropriate, of the relevant passages	New York to Claim NO.
18 sec	5 434 848 A (GUN LEVENT ET AL) July 1995 e abstract e figure 1 e column 3, line 20 - column 4, line 18	1-49
	<del></del>	
	· .	
	•	
	,	
	•	
	-	
		,

#### INTERNATIONAL SEARCH REPORT

information on patent family members

Inta .onal Application No PCT/US 98/19254

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9836543 A	20-08-1998	SE 9700516 A	15-08-1998
US 5434848 A	18-07-1995	NONE	

Form PCT/ISA/210 (petent family annex) (July 1992)

# This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:		
☐ BLACK BORDERS		
☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES		
FADED TEXT OR DRAWING		
☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING		
☐ SKEWED/SLANTED IMAGES		
☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS		
☐ GRAY SCALE DOCUMENTS		
☐ LINES OR MARKS ON ORIGINAL DOCUMENT		
☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY		
□ other:		

# IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.